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ABSTRACT

This study examines within-year persistence of undergraduate white and African American college students, focusing on how this information can be used to inform initiatives on retention. Data was collected from the National Postsecondary Student Aid Study of 1996; the sample included 1,482 African American and 11,292 white four-year undergraduate students; no other ethnic groups were included. The dependent variable was within-year progression of students from fall 1995 to spring 1996; 35 independent variables were grouped by: background, aspiration, achievement, institutional characteristics, college experiences, current year price and subsidies, and accumulated debt load. Research identified several price-related variables that could be integrated into persistence programs: (1) because tuition had a small negative effect on persistence of African American students, keeping tuition increases small and matching increases with financial aid would promote persistence; (2) African Americans respond positively to grants; (3) while work-study programs were not significantly associated with persistence, the study concluded that the social and economic benefits of such programs would result in improved persistence; and (4) accumulated debt load had a negative effect on persistence for African American students. The primary nondebt-related variable was parental educational level; as parental educational level increases, so do the aspirations of their children. (Contains approximately 65 references.) (CH)

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A Comparison of the Persistence of African American and White Students Using NPSAS:96

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A Comparison of the Persistence of African American and White Students Using NPSAS:96

Abstract

The shifting legal sands over affirmative action in admission have diverted attention from persistence of minority students. What influences the retention of majority and African American students? Using NPSAS:96, we compared the persistence of African American and white students, finding interesting differences in the background, aspirations, college experience, price, institutional, and debt variables.

A Comparison of the Persistence of African American and White Students Using NPSAS:96

Introduction

The shifting legal sands over affirmative action have focused attention on the admission of African American students to postsecondary educational institutions. While this battle rages in the courtrooms and legislatures of America, less attention has been given to the persistence of African American students once they have enrolled in higher education. What are the factors that influence the retention of majority and African American students? What are the similarities and differences? How can this information be used to inform initiatives on retention? This study uses the National Postsecondary Student Aid Study of 1996 (NPSAS:96) to compare the persistence of African American and white students, and answers these questions.

Background

Over the past two decades, students have made important gains in educational achievement and attainment (National Center for Educational Statistics, 1999). For example, more high school students are taking core and advanced placement courses. In turn, more are attending post-secondary institutions when they graduate from high school. However, these gains reflect the average for all students, and ignore important differences by ethnicity.

There are substantial differences in the educational achievement and attainment of African American and white students. Parents' educational attainment, a key factor in positive educational outcomes, rose significantly for African Americans. In 1997, 78 percent of mothers and 79 percent of fathers of 15-18 year-old African American students had at least a high school diploma, up from 36 percent and 26 percent in 1972 (National Center for Educational Statistics,

1999). These changes alone may have contributed to the increased educational attainment of African American students in the past 20 years (Jencks, Smith, Acland, Bane, Cohen, Gintis, Hines, & Michelson, 1972).

While the rates of high school completion are similar, African American students who complete high school are less likely to enroll in college and complete a baccalaureate degree than white students. While the percentage of African Americans who attend postsecondary education has risen in the past 20 years, the increase has not kept pace with enrollment patterns for white students. The college going rate for African American students rose to 79 percent of that for white students in 1997, an increase of only 10 percent since 1971 (National Center for Educational Statistics, 1999).

The college completion rates for both white and African American students has risen since 1971. However, the rate of completion is rising faster for whites than for African Americans. Because of this disparity, completion rates for African American students have remained at about one-half the rate of white students for the last 20 years (National Center for Educational Statistics, 1999). These figures demonstrate the need for additional information on the persistence of African American students.

Literature

To inform this research, a brief review of the literature in three areas is needed. They are minority student persistence, research on minority students using national databases, and previous research using the National Postsecondary Student Aid Survey (NPSAS).

While much has been written on minority student persistence, little of it focuses on the impact of financial aid on persistence. Rather, the research has covered academics (Scott, 1993;

Stanley & Porter, 1967; Trippi & Baker, 1989; White & Suddick, 1981), background and motivation (Aiken, 1964; Anastasi, Meade, & Schnediers, 1960; Beasley & Sease, 1974; Clark & Plotkin, 1964; Sedlacek, Brooks, & Mindus, 1968), and environment (Allen & Haniff, 1991). In a meta analysis of studies from the 1970s, Lenning (1980) identified six factors that influenced minority persistence: ability, background, aspirations and motivation, personality and values, institutional variables, and college experiences. Nora, Cabrera, Hagedorn, and Pascarella (1996) found college experiences, achievement, and environmental pull contributed most to persistence of minority students. Stith and Russell (1994) discovered that faculty student interaction was key in African American student persistence.

A few studies of minority student persistence have used financial aid variables. Porter (1989) discovered that African Americans were more likely to persist at private colleges, SES had some influence, and grants and family resources were the primary means of financing college, except for African American students, who used mostly loans. Thomas (1986) found that loans had a greater negative impact on African American students than other student groups. Blanchette (1997) found that an additional grant of $1,000 per semester would increase persistence of African Americans by 7%, but that loans would not influence persistence. She also indicated that income, parents' education, and test scores were all good predictors of minority student persistence.

Several studies using national databases have documented the impact of financial aid on the choice of college for African American students. These studies provide a general picture of the importance of financial aid to African American students, and have theoretical models that inform the present study. St. John and Noell (1989) used the National Longitudinal Study and

the High School and Beyond database to study the effects of financial aid on college enrollment for the high school graduating classes of 1972, 1980, and 1982. They found that all types of aid packages (i.e., combinations of different types of aid) had an impact on enrollment of all three classes. Further, all types of aid had a positive influence on the enrollment of minority students. Millett and MacKenzie (1996) used the Beginning Postsecondary Student database to examine college choice. They found that grants allowed African American and Hispanic applicants to "buy up" to higher priced colleges.

A series of studies using NPSAS (1987 and 1990) by St. John and his associates developed models for NPSAS persistence research (St. John, 1994; St. John & Starkey, 1995a, 1995b; Hippensteel, St. John, & Starkey, 1996). For example, St. John, Paulsen, and Starkey (1996) examined the influence of finances on college choice and persistence decisions. St. John (1992) found that for traditional college students, persistence was negatively influenced by the tuition amount. Cofer, Somers, and Associates (Cofer & Somers, 1997, 1998, 1999a, 1999b; DeAngelis, 1997) have used NPSAS:93 and NPSAS:96 in a series of persistence studies that added debtload and other variables to the St. John model. Cofer and Somers (1997, 1998, 1999a, 1999b) first used thresholds of debt in the analysis, and found that debt had a significant and negative influence on persistence of undergraduates at public and private colleges and students at two-year colleges using NPSAS:93 and 96.

Conceptual Framework

The framework for this study came from sociology, and economics. Sociological theory (Alexander & Eckland, 1980; Blau & Duncan, 1967; Eckland & Alexander, 1980; Parsons, 1959; Thomas, Alexander, & Eckland 1979; Sewell & Shah, 1967; Sewell & Hauser, 1975; Trent

& Medskar, 1968; Wolfle, 1985) suggests that background, family, academic ability, and aspiration variables should be included in any research on student attainment. From economic theory (Becker, 1964; Denison, 1964; McPherson, 1982; Rusbult, 1980; Schultz, 1960) comes the notion that students invest in their education. Student aid and demand studies (Corrazzini, Dugan, & Grabowski, 1963; Hoenack & Weiler, 1975; Hopkins, 1974; Stafford, Lindstedt, & Lynn, 1984; Tannen, 1978) indicate that students "purchase" more education when prices are lower and less when prices are higher. Subsidies, in the form of student financial aid, lower the net cost of attendance. These research studies suggest models that integrate sociological, and economic theories, as represented by background, aspirations, achievement, price, institutional, and college experience variables.

Research Questions

The following research questions were addressed in this study:

1. How did background, aspirations, and achievement affect within-year persistence of undergraduate white and African American Students in 1995-6?
2. How did college experiences and institutional characteristics affect within-year persistence of undergraduate white and African American Students in 1995-6?
3. How did current year price and subsidies, and accumulated debt affect within-year persistence of undergraduate white and African American Students in 1995-6?

Method

The method employed for this study follows that of St. John and Associates (Andrieu, 1990, 1991; Andrieu & St. John, 1993; Cofer, 1998; Cofer & Somers, 1997,1998, 1999a, 1999b; DeAngelis, 1998; Hippensteel, St. John, & Starkey 1996; St. John, 1992,1994; St. John &

Andrieu, 1995; St. John & Starkey, 1995a, 1995b; Starkey 1993).

The National Postsecondary Student Aid Study of 1996 was used for the study. All four-year undergraduate students were included in the sample. The sample was bifurcated into two cohorts: white students and African American students. No other ethnicity groups were included for this analysis.[1] The sample size was 1,482 for African American students and 11,292 for white students.

The dependent variable was within-year progression of students from the fall of 1995 to the spring semester of 1996. Thirty five independent variables within seven factors were included in the analysis. The factors were background, aspiration, achievement, institutional characteristics, college experiences, current year price and subsidies, and accumulated debtload.

For a model where the outcome variable is dichotomous (such as this study), the standard regression formula (Ordinary Least Squared method) can seriously mis-estimate the dependent variable. Instead, a technique known as logistic regression (Aldrich & Nelson, 1984; Cabrera, 1994) should be used. Since a student chooses to persist or not, the outcomes are dichotomous: either yes or no (coded as 1 or 0). The resulting graph of the relationship is not a straight line, but a curved line bounded by 0 and 1.

The beta coefficients are converted to delta-p's using a method recommended by Petersen (1984). The delta-p measures change in the dependent variable. For dichotomous variables, the delta-p provides a measure of the extent to which the outcome is likely to change if a student had the specified characteristic. For example, a delta-p of 0.050 for females is interpreted as

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[1] While we would have liked to include cohorts of African American and Hispanic students, these groups were too small for our analysis.

increasing the probability of enrollment by 5.0 percentage points for this group. With continuous variables, the delta-p is interpreted as meaning that a change in a unit measure will change the probability of the outcome by a certain percentage. For example, a delta-p statistic of .0450 per $1000 of financial aid indicates that the probability of attendance or persistence increases by 4.5 percent per $1000 of financial aid awarded. The delta-p is particularly useful in financial aid policy studies because of its ease in application.

Results

Background variables

While previous NPSAS studies have shown that background variables are important in student persistence, we found that this was the case for white students but not for African Americans. No background variables were significant for African American students in this study (Table 1). For white students, those under the age of 22 were 1.0 percentage points more likely to persist than 22 - 30 year olds, and students over 30 were 1.5 percentage points less likely to persist. White male students were 1.2 percentage points less likely to persist than white women. Low-income white students were .09 percentage points more likely to persist than those with middle or high incomes. Dependent white students, those classified as economically dependent for financial aid purposes, were 2.7 percentage points more likely to persist. Married white students were more likely to persist by 1.2 percentage points.

Parents' educational level, long considered an important variable in academic achievement, was significant for white students, but not African Americans. White students were more likely to persist if their mothers had a college degree (2.0 p.p.) or if their fathers had college degrees (2.5 p.p.).

Aspiration variables

The aspirations variables had mixed results. White students who aspired to a bachelor's degree were more likely to persist (1.8 p.p.). For African American students, only the aspiration for advanced degree was significantly associated with persistence, with those students 7.5 percentage points more likely to persist.

Achievement variables

Achievement, in the form of test scores, was associated with persistence only for white students. Whites who scored in the upper third of the range of test scores for this dataset (1.6 p.p.) and lower third of the range of scores (.4 p.p.) were more likely to persist than those white students who had "average" scores in the middle third of the range.

College experience variables

The college experience variables presented an interesting picture. African American students were more likely to persist if they were sophomores (7.7 p.p.), juniors (7.6 p.p.), or seniors (10.7 p.p.). In addition to these distinctions by grade level, African American students were more likely to persist if they lived on campus (5.7 p.p.) or attended full-time (8.4 p.p.). However, they were less likely to persist if they had a low GPA (-8.6 p.p.) or a "missing" GPA (-28.8 p.p.). White students, on the other hand, were more likely to persist if they lived on campus (2.1 p.p.) or had a high GPA (1.2 p.p.) . White students were less likely to persist if they had a low GPA (-4.6 p.p.) or took a remedial class (-.8 p.p.).

Institutional characteristics

Neither of the institutional variables were significant for African American students. White students, however, were more likely to persist if they attended a private college (1.4 p.p.),

or attended a doctoral institution (.6 p.p.)

Price/debt variables

The price and debt variables were also an interesting contrast. African American students had a very small, negative (-.00001 per $1,000), but significant, delta P for tuition. Total grant dollars (3.3 p.p. per $1,000) and current year loan amounts (1.8 p.p per $1,000) were positively associated with persistence. None of the accumulated debt levels were significant for African Americans. For white students, work study amounts (4.0 p.p. per $1,000) were positively associated with persistence. All debt levels were significant and negatively associated with persistence for whites: high debt (-6.1 p.p.), mid debt (-4.0 p.p.), and low debt (-5.0 p.p.).

This model predicted 87% of the persistence decisions for African American students and 88% for white students.

Discussion

The results show interesting changes. Previous research cited in the literature review has found that background influences persistence of both African American and white students. Surprisingly, none of the background variables were significant for African American students, while six of the background variables were significantly associated with persistence for white students. Why the change?

Likewise, previous research has found that institutional characteristics, aspirations, and achievement make a difference in the persistence of both African American and white students. With one exception (aspiration to advanced degree) we found no association with persistence for African American students, but that these three factors did influence white student persistence.

College experiences do make a difference in student persistence. For African American students in particular, certain college experiences encourage persistence. This suggests strategies to enhance persistence for all students which would be particularly beneficial for African Americans. This approach would be more likely to survive legal challenges, since it does not single out one ethnic group for assistance.

The price and debtload variables were particularly interesting. White students had a positive delta P for work study, and a negative coefficient for all levels of accumulated debtload. African Americans, on the other hand, had positive coefficients for current year loans and grants, and a small negative coefficient for tuition. Perhaps these differences between African American and white students reflect that African American students, and their families, view student loan debt as the "price of admission" to the middle class. With this goal in mind, they assume more debt and persist, at least in the short run.

The differences between African American and white students for the factors background, aspirations, achievement, and institutional characteristics presents interesting questions. Have the variables that influence African American student persistence changed? Do the models used in persistence research tend to measure the characteristics of the dominant ethnic group while blurring the trends for minority students? These are intriguing questions which need further examination.

Analysis

Another perspective from which to analyze these results involves comparison with barriers to access. Demographic, socioeconomic, and legislative trends have reduced the effects of college access barriers that have served to 'sift' students from various socioeconomic

backgrounds into certain entry points into higher and postsecondary education (Carnegie Council, 1980). Similarly, as this paper has addressed, just as barriers exist for access to higher and postsecondary education, barriers also exist for persistence in higher and postsecondary education.

Two primary aspects of social stratification exert influence here; institutional stratification, and the stratification concomitant with students' social origins. First, Trow (1984) identified that a definite stratification system exists in U.S. higher education, and used Merton's (1968) concept of the 'Matthew Effect' to illustrate the effects of cumulative advantage and disadvantage for institutions of higher education. As Hearn (1980) described, "In an on-going and largely irreversible process, existing status hierarchies among institutions are reproduced and elaborated." As a result, a series of socioeconomic links begin to form a chain: the institution a student attends influences educational attainment (Wegner & Sewell, 1970), and the amount of education obtained affects eventual socioeconomic attainments (Sewell, 1971).

Second, in the context of the findings for African-American students that contradict some of the previous research, students' social origins are also at work here. On one hand, the educational experiences that serve as barriers to persistence for students from historically underrepresented backgrounds in higher and postsecondary education are well documented. These include Luttrell's (1989) research on working-class women in adult basic education programs, and Warren's (1995) autobiographical-essay describing the college campus as a 'cultural shock,' among others.

On the other hand, a shift to an increasingly conceptual sociological approach to investigating educational outcomes supports the findings in this study. According to Astin

(1993), student background variables do not exert statistically significant influence on outcomes, and this was confirmed in a recent study of satisfaction with college for first-generation college students, low-income students, and students with disabilities (Vander Putten, 1998). These contradictions in the relevant research warrant further investigation.

Despite recent legal intrusions to the contrary, diversity issues continue to be embraced on most college campuses. The strength, courage, and dreams of these new students provided the motivation for colleges and universities to view their institutional missions in a different light. Unfortunately, the gaps between black and white identified earlier in this chapter continue to widen, as do those between rich and poor. As Pogue (1990) stated,

> Our prisons and the conditions that give rise to imprisonment are doing a better job of recruiting and graduating men and women who are African American, Latino American and Native American than are most of our institutions of higher education. For a host of well known reasons, it is projected that by the year 2000, some 70 percent of African American males will be in prison, dead, on drugs, or alcoholics. (n.p.)

As a result, it is important to recognize that the phenomenon of success in American students at all educational levels is less well understood than are the dimensions of failure. One notable example of this philosophical approach is that by the time educationally disadvantaged children matriculate into postsecondary education, they have often been long-identified as students who are at 'high-risk' for dropping out of school, i.e., failure. In reality, these students have been successful, or 'survivors' in their educational careers leading up to their entry, persistence, and graduation from postsecondary education.

• Implications

Our research points to several price-related variables that can be integrated into a persistence program. First, tuition has a small negative effect on the persistence of African American students. This suggests that keeping tuition increases small and matching any increases with financial aid would promote the persistence of African Americans and lower income students regardless of ethnicity.

Second, African Americans respond positively to grants. Additional monies in institutional, state, and federal grant programs would encourage persistence of African American students and help keep the cost of attendance affordable for all students.

Third, work study can be used more effectively to promote student persistence. While in this study, persistence of African American students was not significantly associated with the receipt of work study, this program provides both social and economic benefits that can result in improved persistence. The interaction between the student and the employing department is important as well as the dollars that work study provides.

Fourth, African American students should not be "loaded up" with debt. Finding other sources of money for the financial aid package will encourage persistence of all students. Moreover, an institutional loan program, particularly one that would "forgive" part of the loan or have a reasonable income contingent repayment plan for graduates with low paying jobs would also be an effective persistence tool. All four of these suggestions can be used by institutions to promote persistence of all students, with a special benefit for African American students.

Finally, as indicated at the beginning of this chapter, it is important to continue to improve the educational achievement of the parents of African American students. As the parental educational level increases, so do the aspirations of the children. With higher

aspirations, more African American students will apply to colleges.

Summary

This paper described a national study of student persistence that compared how background, aspirations, achievement, college experiences, institutional characteristics, current price and subsidies, and accumulated debt all influenced the persistence of African American and white students. When the data were disaggregated by ethnicity, we found surprising differences between African American and white students. These differences between whites and African Americans underscore the need to continue research on these two groups. Further, we found some variables that positively influence the persistence of African American and white students. These commonalities suggest persistence programs that could withstand legal challenges. With the shifting level sands over affirmative action this is not a luxury, but a necessity.

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Table 1

Variables Affecting Persistence of African American and White College Students

	African Americans		Whites	
Variable	Coefficient	Delta P	Coefficient	Delta P
Background				
Gender	-2.2678	-0.0357	-0.1197*	-0.0121
Under 22	0.3549	0.0378	0.1125**	0.0104
Over 30	0.2641	0.0291	-0.1477**	-0.0151
High income	0.5402	0.0537	0.4585	0.0371
Low income	0.0110	0.0013	0.0095**	0.0009
Dependent	0.5009	0.0505	0.3167*	0.0271
Married	-0.2200	-0.0288	0.1339**	0.0123
Mother-Coll.	0.0557	0.0066	0.2283*	0.0202
Father-Coll.	0.0585	0.0069	0.2845*	0.0246
Aspirations				
Aspire to B.A.	-0.1519	-0.0194	0.2035*	0.0182
Aspire adv. degree	0.8347**	0.0745	0.6479	0.0487
Achievement				
High test score	-0.0160	-0.0019	0.1766*	0.0159
Low test score	-0.0695	-0.0086	0.0439**	0.0042
College experiences				
Soph.	0.8790**	0.0772	0.6561	0.0491
Jr.	0.8557**	0.0758	0.5736	0.0443
Sr.	1.5610**	0.1077	1.1646	0.0720
Live on campus	0.5785*	0.0567	0.2465*	0.0217

Full-time student	0.9901**	0.0835	0.9864	0.0651
High GPA	0.4847	0.0492	0.1244**	0.0115
Low GPA	-0.5801*	-0.0857	-0.4029*	-0.0456
No GPA	-1.5202**	-0.2878	-1.0402	-0.1477
Remedial course	0.3877	0.0408	-0.0815**	-0.0081
Work full time	-0.4214	-0.0591	-0.0843**	-0.0084
Institutional characteristics				
Doctoral institution	0.1271	0.0147	0.0675**	0.0064
Private college	0.4535	0.0466	0.1572*	0.0143
Price				
Tuition $	-0.0002**	-0.0000	-0.0001	0.0000
Total grant $	0.3033**	0.0329	0.1500	0.0137
Current yr. Loan	0.1544**	0.0177	0.1398	0.0128
Work study $	0.0014	0.0002	0.5011*	0.0399
High debt	-0.5552	-0.0814	-0.5195*	-0.0614
Mid debt	0.0104	0.0013	-0.3617*	-0.0403
Low debt	-0.5977*	-0.0888	-0.4374*	-0.0501

Note: *p<.05. **p.<.01.